

# HISC 107: The Emergence of Modern Science

Fall 2010

Professor Tal Golan

[tgolan@ucsd.edu](mailto:tgolan@ucsd.edu)

Lecture Times and place: Tu Th, 8 – 9:20 am, SEQUO 147

Office Hours and place: Tu 1-2 pm , H&SS 4044

## **Week 1:**

Meeting 1 (Sep 23) Introduction

Reading: [http://en.wikipedia.org/wiki/History\\_of\\_science](http://en.wikipedia.org/wiki/History_of_science)

## **Week 2:**

Meeting 2 (Sep 28) Young Newton goes to college

Reading: Lindberg, pp. 47-68; Westfall, pp. 3-42

Meeting 3 (Sep 30) the Newtonian Synthesis

Reading: Westfall, pp. 139-158; Newton's excerpts: TBA

## **Week 3:**

Meeting 4 (Oct 5) Enlightened science

Reading: Hankins pp. 1-45

Meeting 5 (Oct 7) Experimental Philosophy

Reading: Hankins, pp. 46-112

## **Week 4:**

Meeting 6 (Oct 12) The Science of Life

Reading: Hankins, pp. 113-157

Meeting 7 (Oct 14) the Science of Man

Reading: Hankins, 158-190

## **Week 5:**

Meeting 8 (Oct 19) The Industrial Revolution

Reading: Dorn, 23-58

Meeting 9 (Oct 21) Natural Theology

Reading: Paley, Natural Theology, excerpts

## **Week 6:**

Meeting 10 (Oct 26) Mid term test

Meeting 11 (Oct 28) Nineteenth Century physics - the grand synthesis

Reading: Purrington, pp. 32-74

## **Week 7:**

Meeting 12 (Nov 2) Thermodynamics

Reading: Purrington, pp. 75-112

Meeting 13 (Nov 4) Evolution

Reading: Bowler 1-49

## **Week 8:**

Meeting 14 (Nov 9) Darwin and Darwinism

Reading: Coleman 57-91

## **Week 9**

Meeting 15 (Nov 16) the sciences of society and the soul – sociology and psychology

Reading - TBA

Meeting 16 (Nov 18) Nineteenth-Century Medicine

Reading: TBA

**Week 10:**

Meeting 17 (Nov 23) The Rise of genetics

Reading: TBA

**Week 11**

Meeting 18 (Nov 30) Fin-De-Siecle science – Growing Uncertainties

Reading: John Heilbron, Fin-de-siecle physics

Meeting 19 (Dec 2) What have we learned?

## Course Policies

- Full participation in class is required to successfully complete this course.
- All submitted work must be your own.
- **Weekly commentaries on the assigned readings**
  - Before each meeting the students will comment on the assigned readings.
  - The comment should be short, not longer than half a page.
  - The comments will be checked but not graded.
  - No late commentaries will be accepted without an documented excuse (health or family emergency).

## Grading

- **Weekly commentaries** %10
- **Mid-term exam** 45%:
- **Final exam** 45%:

## Bibliography

### **Required Books (available for purchase at UCSD Bookstore)**

- Coleman, William, *Biology in the Nineteenth Century* (Cambridge UP, 1977)
- Hankins, Thomas L., *Science and the Enlightenment* (Cambridge UP, 1985)
- Purrington, Robert, D., *Physics in the Nineteenth-Century* (Rutgers UP, 1997)

**All other readings will be posted on the course web site**